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Notice of Allowability

Application No.

10/784,811

Examiner

Michael A. Lyons

Applicant(s)

CHEN ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03 May 2006.
2. ☒ The allowed claim(s) is/are 1-17.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Terminal Disclaimer

The terminal disclaimer filed on May 3, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent 6,744,519 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

Claims 1-17 are allowed in view of the prior art.

The following is an examiner's statement of reasons for allowance:

As for claim 1, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a fiber optic gyroscope, the gyroscope comprising a loop closure electronic circuit, the circuit generating a first phase step signal for determining a rate of rotation, a color noise suppression module coupled to the loop closure electronic circuit, the module generating a randomized phase jump amplitude signal, and an accumulation point, the accumulation point summing the phase jump amplitude signal and the first phase step signal to create a feedback signal for the gyroscope, in combination with the rest of the limitations of the above claim.

As for claim 8, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a fiber optic gyroscope with color noise suppression, the gyroscope comprising an electro-optic crystal phase modulator that generates a modulated signal, a first phase jump signal added to the modulated signal, a photo detector coupled to the modulator to detect a modulated signal, an amplifier to amplify the modulated signal, an analog-to-digital converter, the converter converting the modulated signal to a digital modulated signal, a phase

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jump amplitude and timing controller to generate a randomized phase jump amplitude signal, the signal being combined with the modulated signal to create a feedback signal, with the feedback signal being coupled to an input of the electro-optic crystal phase modulator, in combination with the rest of the limitations of the above claim.

As for claim 13, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a method comprising the creation of a plurality of phase steps to determine a rate of rotation signal in a fiber optic gyroscope, the accumulation of a plurality of phase steps to create an accumulated phase step signal, the creation of a randomized phase jump amplitude signal for enabling color noise suppression, and the summation of the phase jump amplitude signal with the accumulated phase step signal to create a feedback signal for the fiber optic gyroscope, in combination with the rest of the limitations of the above claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420. The examiner can normally be reached on Monday through Friday.

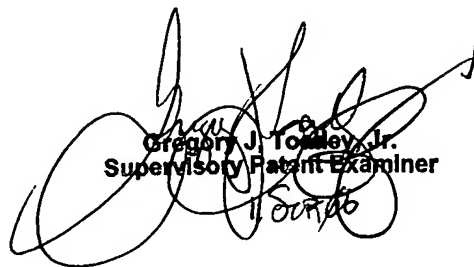
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAL

August 30, 2006


Gregory J. Tomlin, Jr.
Supervisory Patent Examiner